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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/656,860	09/05/2003	Frank Edward Anderson	2001-0698.02	8569

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LEXMARK INTERNATIONAL, INC.  
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LEXINGTON, KY 40550-0999

EXAMINER
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STEPHENS, JUANITA DIONNE

ART UNIT	PAPER NUMBER
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2853

DATE MAILED: 05/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/656,860

Applicant(s)

ANDERSON ET AL.

Examiner

Juanita D. Stephens

Art Unit

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on Amendment filed 3/3/2005.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) \_\_\_\_\_ is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 29 is/are allowed.
- 6) ☒ Claim(s) 1-4, 6, 7, 12-14, 16, 18, 19, 24-26 and 28 is/are rejected.
- 7) ☒ Claim(s) 8-11 and 20-23 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 3/3/2005 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

Claim 5, 15, and 17 canceled in Amendment filed 3/3/2005.

***Drawings***

1. The drawings are objected to because reference numbers depicting the “nozzles, resistor, and print media” are missing. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the

Art Unit: 2853

"passage, and silicon chip" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

3. The disclosure is objected to because of the following informalities:

Reference number depicting the "nozzles, resistor, and print media" are missing.

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 3-4, 12-14, 16, and 24-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Imanaka et al. (US 6,264,302 B1).

Imanaka et al. discloses a method of improving power delivery to ink nozzle firing elements of an inkjet printhead and an apparatus (Figs. 28 and 30) comprising: **1)** an inkjet printhead (H)(Figs.42 and 43) silicon chip, **2)** a housing including a passage configured for transporting ink (as seen in Figs. 42 and 43), **3)** a plurality of nozzles (18)(Fig. 4) for forming ink drops to be ejected onto print media in an ink jet printer, **4)** a printhead resistor (2)(Fig. 42) for firing the nozzles, **5)** a capacitor/capacitor means (701/702) on the ink jet print head for supplying current to heat the printhead resistor to cause the nozzles to fire, wherein the capacitor, resistor, and nozzles are secured to the housing (col 39, lns 65-66, Fig. 42 and 43), wherein the capacitor means is located adjacent the inkjet printhead silicon chip and secured therewith, **6)** an inkjet printhead cartridge (col 30 lns 57-60) comprising the inkjet printhead (200) (col 30, lns 57-60), **7)** an inkjet printer comprising the inkjet printhead cartridge (as seen in Figs. 27 and 30), **8)** installing the inkjet printhead in an inkjet printhead cartridge (Fig.

Art Unit: 2853

27), **9)** installing the inkjet printhead cartridge in an inkjet printer (Fig. 30), and **10)** wherein the capacitor means includes at least one capacitor (701/702).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 2, 6, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imanaka et al. (US 6,264,302 B1) in view of Applicants Admitted Prior Art (AAPA).

Imanaka et al discloses the claimed invention, with the exception of the capacitor has a capacitance of about 22 uF. However, AAPA discloses that the value of the capacitor 5 can be the same as that of capacitors used in prior art systems, typically 5-50 uF (page 7, lns 1-2). It would have been obvious at the time the invention was made to a person having ordinary skill in the inkjet art to modify Imanaka et al. to specifically provide the known prior art capacitance of about 5-50 uF as taught to be old in AAPA for the purpose of reducing the impedance between the capacitor and the printhead, allowing the capacitor to be matched to the printhead cartridge firing requirements, allowing remote voltage sensing at the printhead, providing better voltage regulation at the printhead, and reducing the likelihood the printhead electronics will be damaged due to voltage spiking.

Art Unit: 2853

8. Claims 7 and 19 rejected under 35 U.S.C. 103(a) as being unpatentable over Imanaka et al. (US 6,264,302 B1) in view of Schulte et al. (6,567,251 B1).

Imanaka et al discloses the claimed invention, with the exception of the wherein the capacitor comprise layer ceramic of tantalum material (recited in claims 7 and 19). Schulte et al. at least teaches wherein the capacitor means (330) includes two or more capacitors and wherein the capacitor comprises layer ceramic of tantalum material (col 7, Ins 9-10, Ins 36-38, Fig. 3). It would have been obvious at the time the invention was made to a person having ordinary skill in the ink jet art to modify Imanaka et al. by providing the capacitor/capacitor means as taught to be old by Schulte et al. for the purpose of providing protection of electrostatic discharge events for not only electrical components, but also the electrically-inactive components.

9. Claims 26 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imanaka et al. (US 6,264,302 B1) in view of Hawkins et al. (US 5,010,355).

Imanaka et al discloses the claimed invention, with the exception of the wherein the printhead is a CMOS printhead. Hawkins et al. at least teaches that there are two type of semiconductor devices which could be used for integration on the part of the printhead containing heating elements, which are bipolar and MOS, wherein MOS includes CMOS and NMOS (col 3, Ins 48-51). It would have been obvious at the time the invention was made to a person having ordinary skill in the ink jet art to modify Imanaka et al. by providing the well known CMOS

Art Unit: 2853

printhead as taught to be old by Hawkins et al. for the purpose of self shut down of self regulation of current over the total channel width of the device.

***Allowable Subject Matter***

10. Claims 8-11 and 20-23 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. The following is a statement of reasons for the indication of allowable subject matter:

The limitation of wherein the capacitor of capacitor means is around 1.0-3.2 mm wide by 1.25-2.5 mm long by 0.5 high, recited in claims 8 and 20. This invention solves the problem of reducing the impedance between the capacitor and the printhead, allowing the capacitor to be matched to the printhead cartridge firing requirements, allowing remote voltage sensing at the printhead, providing better voltage regulation at the printhead, and reducing the likelihood the printhead electronics will be damaged due to voltage spiking.

The limitation of wherein the capacitor of capacitor means is around 3.2 mm wide by 2.5 mm long by 0.5 high, recited in claims 9 and 21. This invention solves the problem of reducing the impedance between the capacitor and the printhead, allowing the capacitor to be matched to the printhead cartridge firing requirements, allowing remote voltage sensing at the printhead, providing better voltage regulation at the printhead, and reducing the likelihood the printhead electronics will be damaged due to voltage spiking.



Art Unit: 2853

The limitation of wherein the capacitor of capacitor means is around 3.2 mm wide by 1.6 mm long by 0.5 high, recited in claims 10 and 22. This invention solves the problem of reducing the impedance between the capacitor and the printhead, allowing the capacitor to be matched to the printhead cartridge firing requirements, allowing remote voltage sensing at the printhead, providing better voltage regulation at the printhead, and reducing the likelihood the printhead electronics will be damaged due to voltage spiking.

The limitation of wherein the capacitor of capacitor means is around 2.0 mm wide by 1.25 mm long by 0.5 high, recited in claims 11 and 23. This invention solves the problem of reducing the impedance between the capacitor and the printhead, allowing the capacitor to be matched to the printhead cartridge firing requirements, allowing remote voltage sensing at the printhead, providing better voltage regulation at the printhead, and reducing the likelihood the printhead electronics will be damaged due to voltage spiking.

12. Claim 29 is allowed.

### ***Conclusion***

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory

Art Unit: 2853

action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

#### **Contact Information**

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juanita D. Stephens whose telephone number is (571) 272-2153. The examiner can normally be reached on Flex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2853

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Juanita D. Stephens". The signature is fluid and cursive, with the first name "Juanita" being more prominent.

JS

May 16, 2005

Juanita D. Stephens  
Primary Examiner  
Art Unit 2853